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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,403	12/28/2000	Van Jacobson	112025-0175	6925
24267	7590	06/02/2006	EXAMINER	
CESARI AND MCKENNA, LLP 88 BLACK FALCON AVENUE BOSTON, MA 02210		ELALLAM, AHMED		
		ART UNIT		PAPER NUMBER
		2616		

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/750,403	JACOBSON ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	AHMED ELALLAM	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 17 February 2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-15, 17-27, 29-31, 33-38, 40-45, 47-52 and 54-67 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-3, 5-15, 17-27, 29-31, 33-38, 40-45, 47-52 and 54-67 is/are rejected.
- 7) Claim(s) 4 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date. _____.   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____.                                   |

## **DETAILED ACTION**

This responsive to Amendment filed on 2/17/2006. The Amendment has been entered.

Claims 1-15, 17-27, 29-31, 33-38, 40-45, 47-52, 54-67 are pending.

### ***Claim Objections***

1. Claim 49 are objected to because of the following informalities:

Claim 49 depends from cancelled claim 46. Examiner, in this office action assumes that it should depend from base claim 45.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-15, 17-27, 29-31, 33-38, 40-45, 47-52, 54-67 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are:

As to claim 1, the omitted step is " the filtered virtual time debt is determined using a filter based on an exponential weighted moving average (EWMA) virtual time delay of a presently received packet using the expression,

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$$\text{EWMA}_k = (1-g) \text{EWMA}_{k-1} + g(\text{VTD})_k,$$

Where k indicates the presently received packet, and k-1 indicates the last packet received, the VTD is the virtual time dept.

According to the specification this step is one necessary for the invention to work.

Claims 2-3 and 5-7 depends from respective parent claim 1, thus they are subject to the same rejection.

As to claims 8, 11, 12, 14, the omitted step is "the filtered virtual time debt is determined using a filter based on an exponential weighted moving average (EWMA) virtual time delay of a presently received packet using the expression,

$$\text{EWMA}_k = (1-g) \text{EWMA}_{k-1} + g(\text{VTD})_k,$$

Where k indicates the presently received packet, and k-1 indicates the last packet received, the VTD is the virtual time dept, and VTD is the difference between the time the packet is expected to arrive and the time the packet actual arrived". According to the specification this step is one necessary for the invention to work.

Claims 9, 10, 13, 15 depends from respective parent claims 8, 11, 12, and 14, thus they are subject to the same rejection.

As to claims 17-23, the omitted steps is "the filtered virtual time debt is determined using a filter based on an exponential weighted moving average (EWMA) virtual time delay of a presently received packet using the expression,

$$\text{EWMA}_k = (1-g) \text{EWMA}_{k-1} + g(\text{VTD})_k,$$

Where k indicates the presently received packet, and k-1 indicates the last packet received, the VTD is the virtual time dept.

According to the specification this step is one necessary for the invention to work.

As to claims 24, and 26, the omitted step is: "the filtered virtual time debt is determined using a filter based on an exponential weighted moving average (EWMA) virtual time delay of a presently received packet using the expression,

$$EWMA_k = (1-g) EWMA_{k-1} + g(VTD)_k,$$

Where k indicates the presently received packet, and k-1 indicates the last packet received, the VTD is the virtual time dept.

According to the specification this step is one necessary for the invention to work.

Claim 25 depends from respective parent claim 24, thus it is subject to the same rejection.

As to claims 27, 29-30, claims 27, 29-30 suffers from similar deficiencies as indicated in the above claims 24 and 26, thus they are subject a similar rejection.

As to claims 31 and 38, the omitted step is that the virtual time dept used in comparing step should be in accordance with the expression EWMA indicated above with regard to claim 1 (EWMA as defined in claim 4).

As to claims 33-37, 40-44, claims 33-37, 40-44 depends from respective parent claims 31 and 38, thus they are subject to the same rejection.

As to claims 45, 52, the missing step is the step is that the filtered time debt should be in accordance with the expression EWMA as indicated in claim 4.

As to claims 47-51, claim 47-51 depends from claim 45, thus they are subject to the same rejection.

As to claims 54-67, the omitted step is the expression of the exponential weighted moving average as indicated by the formula:

$$\text{EWMA}_k = (1-g) \text{EWMA}_{k-1} + g(\text{VTD})_k$$

Where k indicates the presently received packet, and k-1 indicates the last packet received, the VTD is the virtual time dept.

According to the specification the use of the formula in the calculation of the EWMA is one necessary for the invention to work.

### ***Allowable Subject Matter***

3. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Response to Arguments***

4. Applicant's arguments filed 2/17/2006 have been fully considered but they are not persuasive:

#### **35 USC § 112 second paragraph:**

The rejections under 35 USC § 112 second paragraph have been withdrawn in view of Applicants amendment to claims 1, 8, 11, 12, 14, 17, 14, 26, 27, 29, 31, 38, 45 and 52.

**Claim objections:**

The objections to claims 33, 36 and 47 have been withdrawn in view of the Amendment.

**35 USC § 112 first paragraph:**

Applicants assumed that claims 17, 24-27, 29,31,33, 35-38,40, 42-45, 47, and 51-52 are allowable in view of the Amendment. Applicants lack argument with regard to the assumed allowability. In addition Applicants did not amend the independent claims to include the omitted step(s) as indicated in the last office action.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Li et al, US (6,826,151); Raisanen, US (6,977,942); and Smith et al, US (6,862,298).
6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, To Doris can be reached on (571) 272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A.E  
Examiner  
Art Unit 2616  
5/23/06



CHIRAG SHAH  
PATENT EXAMINER, 2616